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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,910	12/24/2003	Sang-Jin Kim	1567.1063	9164
49455 7590 08/31/2007 STEIN, MCEWEN & BUI, LLP 1400 EYE STREET, NW SUITE 300 WASHINGTON, DC 20005			EXAMINER MERCADO, JULIAN A	
			ART UNIT 1745	PAPER NUMBER
			MAIL DATE 08/31/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/743,910	Applicant(s) KIM ET AL.	
	Examiner Julian Mercado	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.  
     4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 18-29 is/are rejected.
- 7) ☒ Claim(s) 1 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2003-12-24</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 10-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on June 1, 2007.

Applicant's election with traverse of Group I, claims 1-9 and 18-29 in the reply filed on June 1, 2007 is acknowledged. The traversal is on the ground(s) that the two groups are so closely related that all of the claims should remain in the same application. This is not found persuasive because as set forth in the communication sent on May 10, 2007, the inventions have acquired a separate status in the art as shown by their mutually distinct classifications. As to there being no references to show the necessity for requiring restriction, the examiner is not aware of any formal requirement for citation of any references to substantiate a restriction under U.S. practice.<sup>1</sup> The examiner further maintains that a burden exists on examining both sets of claims due in-part to their respective and distinct classifications.

The requirement is still deemed proper and is therefore made FINAL.

### ***Information Disclosure Statement***

The Information Disclosure Statement filed on December 24, 2003 has been considered by the examiner.

***Claim Objections***

Claims 1 and 8 are objected to because of the following informalities:

1. In claim 1 at line 3 and claim 19 line 2, it is suggested to change "an Raman Spectroscopy" to --a Raman Spectroscopy--.
2. In claim 8 at line 2, it is suggested to change "a BET , specific surface area" to --a BET specific surface area--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 18 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Sheem et al.

(U.S. Pat. 6,355,377 B1).

See col. 7 line 51 et seq.

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<sup>1</sup> To the examiner's knowledge, only national-stage applications related to a PCT international application require a reference to show that the special technical feature shared between two or more groups of inventions is not a contribution to the art – this practice has no analogue in regularly-filed U.S. applications.

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Claim 18 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Miyabayashi et al. (U.S. Pat. 5,401,598).

See col. 2 line 14 et seq. and col. 6 line 18 et seq.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheem et al. (U.S. Pat. 6,355,377 B1) in view of Miyabayashi et al. (U.S. Pat. 5,401,598).

The teachings of Sheem et al. are discussed above.

For claims 1, 19, 20, 21, Sheem et al. teaches further teaches, for a negative active material of a rechargeable lithium battery, a crystalline carbon core having an intensity ratio  $Ra$   $I(1360)/I(1580)$  of substantially 0.01 to 0.45. See col. 7 line 48 et seq. A shell has a turbostratic or half-onion ring structure coated on the core. See col. 2 line 21 et seq. The shell, disclosed as both semi-crystalline and crystalline, comprises crystalline carbon micro-particles and semi-crystalline carbon. See col. 3 line 15 et seq., col. 5 line 7 et seq. and col. 6 line 17 et seq. The shell has an intensity ratio  $Ra$   $I(1360)/I(1580)$  of "0.2 or more." See col. 7 lines 48-50.

For claims 3, 5, 23, 25, the carbon micro-particles have a plate shape and may be natural or artificial graphite. See col. 6 lines 10-12.

Sheem et al. does not explicitly teach the shell having an intensity ratio  $Ra$

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I(1360)/I(1580) of substantially 0.46 to 1.5. While Sheem et al. does teach a ratio of "0.2 or more", Miyabayashi et al. teaches a ratio  $I(1360)/I(1580)$  of "0.4 or more... most preferably 0.90 to 1.3." (col. 2 lines 4-9 and lines 55-57). The skilled artisan would find obvious to modify Sheem et al. by employing a higher intensity ratio as claimed. The motivation for such a modification is to obtain an electrode having an excellent balance of capacity size and charge/discharge cycle characteristics. (col. 2 lines 58-63)

For claims 4, 9, 22, 24 and 29, given that the prior art teaches or at least suggests the same negative active material such as measured by Raman Spectroscopy peak intensity, it would naturally flow for the same negative active material to have, inherently, an intensity ratio  $I(110)/I(002)$  of less than 0.01, a BET surface area of approximately 2.3 to 3.6 m<sup>2</sup>/g and the instant tapping densities (all of these parameters being intrinsic of the material), absent of a showing by applicant that the claimed invention distinguishes over the reference. *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990)

As to claims 2, 6-8 and 26-28 which pertain to average diameters, surface areas and the amount of carbon, , absent of unexpected results it is asserted that these are optimizable parameters for a result-effective variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "P. Ryan", with a large loop at the end.

PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER